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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,489

11/25/2005

Charalampos Kosmas

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Davidson, Davidson & Kappel, LLC  
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EXAMINER

SANDERSON, JOSEPH W

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,489	<b>Applicant(s)</b> KOSMAS, CHARALAMPOS	
	<b>Examiner</b> Joseph W. Sanderson	<b>Art Unit</b> 3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/17/05</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

3. Claims 20 and 31 are objected to because of the following informalities:

Claim 20, line 1, it appears from the previous set of claims that “wording” should be --working--;

Claim 20, line 2, “to enable to communication” should be --to enable communication--;

Claim 31, line 1, “wherein” should be removed.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 22 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 recites the limitation "the first position sensor" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 17-20 and 26-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Turner (US 2002/0179775).

Regarding independent claims 17 and 27:

Turner discloses a service vehicle (14) and system for performing an in-space operation on a selected target spacecraft (16-22), comprising:

a communication module (at minimum 154) having at least one of a transmission and a receiving characteristic ([0034]) configurable in order to meet at least one of a transmission and a receiving parameter of the selected targeted spacecraft; and

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a ground control module for delivering operational commands to the service vehicle ([0034] indicates communications between earth-based controllers).

Regarding claims 18 and 19:

The discussion above regarding claim 17 is relied upon.

Turner discloses the communications module including a transmitter and configurable receiver (154 both transmits to and receives data from the target craft).

Regarding claim 20:

The discussion above regarding claim 19 is relied upon.

Turner discloses the receiver having a working frequency that is adjustable in so as to enable communication with a telemetry channel of the selected target craft, as all electronic signals have working frequencies that can be adjusted.

Regarding claim 26:

The discussion above regarding claim 17 is relied upon.

Turner discloses an identification device (160) configured to identify the target spacecraft.

Regarding claims 28 and 30:

The discussion above regarding claim 27 is relied upon.

Turner discloses the ground control module configured to receive data from the service vehicle using target spacecraft as a relay station for signals emitted from the

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service vehicle, as the target craft is in communication with both the ground and the service craft, which renders the system configured to relay signals as claimed, and thus renders the target spacecraft's communications system a relay module.

Regarding claim 29:

The discussion above regarding claim 27 is relied upon.

Turner discloses an orbit-based utility base (24) for the service vehicle.

Regarding claim 31:

The discussion above regarding claim 27 is relied upon.

Turner discloses an engine module attachable to the service vehicle (any of 130, 132 or 134).

8. Claims 17-24, 27 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanson et al. (US 6 296 205).

Regarding independent claims 17, 27 and 32:

Hanson discloses a service vehicle (150) and system for performing an in-space operation on a selected target spacecraft (110), comprising:

a communication module (280 and 285) having at least one of a transmission and a receiving characteristic (both) configurable in order to meet at least one of a transmission and a receiving parameter of the selected targeted spacecraft; and

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a ground control module (160 or 288) for delivering operational commands using a telemetry channel (the channel which carries the data) to the service vehicle via the target spacecraft (col 7, lines 1-10).

Regarding claims 18 and 19:

The discussion above regarding claim 17 is relied upon.

Hanson discloses the communications module including a transmitter and configurable receiver (280 and 285).

Regarding claim 20:

The discussion above regarding claim 19 is relied upon.

Hanson discloses the receiver having a working frequency that is adjustable in so as to enable communication with a telemetry channel of the selected target craft, as all electronic signals have working frequencies that can be adjusted.

Regarding claim 21:

The discussion above regarding claim 20 is relied upon.

Hanson discloses a control module (230) configured to provide a setpoint for an output power of the communication module (i.e. it provides a specific power level to the equipment).

Regarding claims 22-24:

The discussion above regarding claim 21 is relied upon.

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Hanson discloses two position sensors ("sonar, infrared or other ranging" equipment which may also be used; col 3, lines 38-39) and an orientation sensor (camera; col 3, lines 33-38) connected to the input portion of the control module (via the flight control system).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Turner (US 2002/0179775) in view of Eiichi (JP 3 118 300).

The discussion above regarding claim 17 is relied upon.

Turner discloses a spacecraft which docks with other spacecraft via coupling devices (144-148), but does not disclose the docking device comprising a hollow first axle and a second axle within carrying an activateable arrow tip.

Eiichi teaches a spacecraft docking mechanism comprising an activateable arrow tip (structure at distal end of 3a) on a shaft (3a) within a hollow shaft (3b).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Turner to use the docking mechanism of Eiichi



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as this is a well known predictable means for docking a spacecraft to other spacecraft that could form the coupling devices of Turner to secure the two spacecraft to each other.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph W. Sanderson whose telephone number is (571)272-0474. The examiner can normally be reached on M-F 7:00 am - 2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael R. Mansen can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Mansen/  
Supervisory Patent Examiner, Art Unit 3644

Joseph W. Sanderson